

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Tuscarora Bay Marsh**

Designated: **October 15, 1987**

County: **Niagara**

Town(s): **Wilson**

7½' Quadrangle(s): **Wilson, NY**

Score	<u>Criterion</u>
--------------	-------------------------

9	Ecosystem Rarity (ER) One of the largest, undeveloped coastal wetlands in Niagara County.
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
0	Human Use (HU) No significant fish or wildlife related human uses of the area.
4	Population Level (PL) Concentrations of many fish and wildlife species, especially warmwater fishes and marsh-nesting birds, are unusual in Niagara County's coastal area.
1.2	Replaceability (R) Irreplaceable

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R]

= 16

DESIGNATED HABITAT: TUSCARORA BAY MARSH

LOCATION AND DESCRIPTION OF HABITAT:

Tuscarora Bay Marsh is located on the East Branch of Twelvemile Creek, between N.Y.S. Route 18 and Tuscarora Bay, in the Town of Wilson, Niagara County (7.5' Quadrangle: Wilson N.Y.). The fish and wildlife habitat consists of approximately 40 acres of undisturbed cattail marsh and small, wooded islands. Much of this wetland area is located within Wilson-Tuscarora State Park. The only open water within the marsh is the East Branch, a narrow (10-20' wide), slow-moving, warmwater stream, which meanders through the area. Tuscarora Bay Marsh is bordered by undeveloped woodlands to the east, south, and west. To the north, Tuscarora Bay proper has been heavily developed as a residential and small craft harbor area, containing marinas, boat launches, extensive bulkheading, houses, trailers, and related businesses, resulting in some encroachment into the marsh.

FISH AND WILDLIFE VALUES:

Tuscarora Bay Marsh is the second largest area of undisturbed coastal marsh remaining in Niagara County. Despite its small size relative to wetlands around eastern Lake Ontario, this area provides valuable habitat for a variety of fish and wildlife species. Common breeding bird species in the area include green-backed heron, mallard, wood duck, common moorhen, tree swallow, common yellowthroat and red-winged blackbird. Other wildlife species inhabiting the marsh include muskrat, raccoon, short-tailed shrew, painted turtle, northern water snake, and green frog. Tuscarora Bay Marsh is an important warmwater fisheries habitat, providing spawning and nursery areas for northern pike, brown bullhead, and a variety of panfish. Fish production in the marsh contributes to the diverse recreational fishery in Tuscarora Bay. Locally significant concentrations of salmonids (steelhead, and coho and chinook salmon) also enter the East Branch of Twelvemile Creek during spring and fall spawning runs. However, due to access limitations, the section of stream within Tuscarora Bay Marsh receives relatively little fishing pressure.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:

- destroy the habitat; or,
- significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,
3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Any activity that substantially degrades water quality, increases turbidity or sedimentation, reduces flows, or increases water level fluctuations in Tuscarora Bay Marsh, would adversely affect a variety of fish and wildlife species. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) could adversely impact on the fish and wildlife resources of the area. Elimination of wetland habitats, and further human encroachment into the area, including dredging, filling, and motorboat access development, would severely limit the area's value to fish and wildlife. However, habitat management activities, including expansion of productive littoral areas, may be designed to maintain or enhance populations of certain fish or wildlife species. Barriers to fish migration, whether physical or chemical, would have a significant effect on fish populations within the marsh, and in adjacent or connected waters. Any disturbance of the East Branch of Twelvemile Creek between February and June, when most warmwater fish are spawning, could be especially detrimental. Existing woodlands bordering Tuscarora Bay Marsh should be maintained for their value as cover, perching sites, and buffer zones.